Technology Area

DEFINITION

Name	Geospatial Data Development Standards
Description	The Geospatial Data Development Standards technology area addresses the procedures, technology, and guidelines that provide for the development, integration, sharing, and utility of geospatial data. Its development focuses on what is called framework data that essentially constitute the backbone of the geospatial data warehouse. These data consist of commonly needed, used, and produced data brought into a common standard and made widely accessible. The National Spatial Data Infrastructure list includes: geodetic control, orthoimagery, elevation, transportation, hydrography, governmental units (boundaries), and cadastral. The Missouri GIS Advisory Committee expanded this list to also include: geology, land cover / land use, soils, and critical infrastructure.
Rationale	The goal is to improve operations, reduce costs, and facilitate new analyses and decision making by providing a readily available set of basic digital geographic data. The documentation provided within this technology area will enable leveraging of individual (localized) geographic data development efforts for the benefit of the state. As well, agencies can attach their own data to these common data sets and build their applications more easily and at less cost. These data further support the development of the National Spatial Data Infrastructure (NSDI).
Benefits	These data represent the best available data for an area, certified, standardized, and described according to a common standard. They provide a foundation on which organizations can build by adding their own detail and compiling other data sets. Once created, the benefits to Missouri citizens would include but not be limited to: • Save money by sharing the costs of data production and reducing duplicative efforts • Save development effort and develop applications faster and more easily by using existing data or data development standards • Improve citizen satisfaction with e-government through better data, faster response to inquiries, and improved operations • Provides better data for decision making • Provide concise direction to vendors regarding needed technical features associated with a data development RFP The development of the Missouri framework also aids in the development of a network of geographic data users within the state. As more organizations participate, the data pool widens, and more resource savings and operational benefits are realized.

ASSOCIATED ARCHITECTURE LEVELS

Specify the Domain Name	Information
Specify the Discipline Name	Geographic Information Technology (GIT)

KEYWORDS	
List Keywords	NSDI, Framework, Standards, Geospatial Data, Elevation, Hydrography, Geodetic Control, Cadastral, Transportation, Governmental Units, Orthoimagery, Land Use / Land Cover, Geology, Soils, Critical Infrastructure, Data Development, Data Creation, Guidelines
ASSOCIATED COMPLIANCE COMPONENTS	
List the Compliance Component Names	*General Compliance Components* – **Geospatial Positioning Accuracy Standards, Part 3: National Standard for Spatial Data Accuracy, FGDC-STD-007.3-1998** The objective is to facilitate sharing and interoperability of geospatial data by providing a flexible and inclusive standard for testing and reporting accuracy of maps and geospatial data. The National Standard for Spatial Data Accuracy (NSSDA) implements a well-defined statistic and testing methodology for positional accuracy of maps and geospatial data derived from sources such as aerial photographs, satellite imagery, or maps. Accuracy is reported in ground units. The testing methodology is comparison of data set coordinate values with coordinate values from a higher accuracy source for points that represent features readily visible or recoverable from the ground. While this standard evaluates positional accuracy at points, it applies to geospatial data sets that contain point, vector, or raster spatial objects. Data content standards, such as FGDC Standards for Digital Orthoimagery and Digital Elevation Data, will adapt the NSSDA for particular spatial object representations. The standard insures flexibility and inclusiveness by omitting accuracy metrics, or threshold values, that data must achieve. However, agencies are encouraged to establish "pass-fail" criteria for their product standards and applications and for contracting purposes. Ultimately, users must identify acceptable accuracies for their applications. Ground coordinates of points established according to Federal Geodetic Control Subcommittee (FGCS) draft Standards for Geodetic Control Networks and process specifications are used in the National Spatial Reference System (NSRS) control network. NSRS ground control may be used to reference project control surveys to a common georeference system. The accuracy of spatial data derived from control surveys is expressed using the NSSDA. The NSSDA may also be related to FGCS Standards for Geodetic Networks by using NSRS points to test the accuracy of geospatial data. Both the NSSDA and Standards for Geodetic Networks will be integrated into a multipart FGDC Geospatial Positioning Accuracy Standard. **For more information:** *Download the standard, <u>Geospatial Positioning Accuracy Standards, Part 3: National Standard for Spatial Data Accuracy</u> (PDF format) (www.fgdc.gov/standards/documents/standards/accuracy/chapter3.pdf) - *Principles of Error Theory and Cartographic Applications*

(www.fgdc.gov/standards/status/tr96.pdf)

*The Minnesota Governor's Council on Geographic Information, with support from the Minnesota Land Management Information Center (LMIC) (www.mnplan.state.mn.us/press/accurate.html), prepared the *Positional Accuracy Handbook: Using the National Standard for Spatial Data Accuracy to measure and report geographic data quality,* October 1999 (33 pages, 920K, PDF) (www.mnplan.state.mn.us/pdf/1999/lmic/nssda_o.pdf) to facilitate use of the FGDC standards. Printed copies of the Handbook are also available. See the LMIC site for more information.   This handbook describes how positional accuracy can be measured and reported for databases that contain geographic features like roads, rivers, and property lines. Five practical examples walk you through the process using databases developed at Minnesota Departments of Transportation and Natural Resources, the City of Minneapolis, Washington County, and Lawrence Mapping.

Mathematics to calculate vertical and horizontal accuracy statistics are made easy with worksheets available to be downloaded from the LMIC site (Two files in one self-extracting executable, 30K, Excel format).

ASSOCIATED PRODUCT COMPONENTS

List the Product Component Names	1. Geodetic Control 2. Orthoimagery 3. Elevation 4. Transportation 5. Hydrography 6. Governmental Units 7. Cadastral 8. Geology 9. Land Use / Land Cover 10. Soils 11. Critical Infrastructure

CURRENT STATUS

Provide the Current Status	☐ In Development ☐ Under Review ☒ Approved ☐ Rejected

AUDIT TRAIL

Creation Date	07/03/03	*Date Approved / Rejected*	10/14/2003
Reason for Rejection			
Last Date Reviewed		*Last Date Updated*	
Reason for Update			

Approved